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and sends the appropriate control signals to the graphics subsystem manager 36. A first display 26 and a second display 28 receive the data encoded by Encoder1 30 and Encoder2 32.

Page 8, line 18:

In the embodiment of Figure 4, the YUV surface is processed by the drawing engine 60 in order to blend using the 3D drawing engine capability within the display controller apparatus to create a blended YUV surface. This blended surface is like the one which could also be achieved using a blending unit, namely the logo is blended with the source video surface to generate the YUV overlay surface which is then read for display by CRTC2 in full screen output and separately read by CRTC1 for display within a window in the desktop. The output of CRTC1 11 includes a window containing a YUV video with sub-picture blending overlaid over the RGB desktop.

IN THE DRAWINGS

A marked-up copy of Figure 4 is submitted herewith for the Examiner's approval.

- R E M A R K S -

The Applicant has amended the application in order to comply with 37 CFR 1.84(p)(5). Reference numerals "26", "28", "30", "31", "32", and "36" in Figure 1 were added to the specification to include a reference in the description for each reference sign in the figures. Support for this amendment is found in figure 1 of the present application as well as at page 10, lines 8-9 of the 09/526,440 application, incorporated by reference in the present application. Reference numeral "21" from figure 4 has been removed.

The Examiner has objected to figure 4 as being of poor quality. In view of the current proposed amendment to figure 4, Applicant will wait for approval before submitting a high quality figure.

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The Examiner has rejected claims 1-7 under 35 U.S.C. 112 (1) as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor had possession of the claimed invention at the time of filing. More specifically, the Examiner states there is no support for the amended limitation of "at least one of blend and overlay" since the specification does not describe the display controller as performing both blending and overlaying one surface onto another surface to create the screen image.

The Applicant has amended the specification to include the text present in figure 4. No new subject matter has been entered by this amendment since the new text simply describes what is shown and written in the figure. Figure 4 shows the blending and overlaying of one surface onto another surface to create the screen image. The output of CRTC1 11 is a windowed output with sub-picture blending. Additionally, the YUV video is overlaid on the RGB desktop. The Applicant believes this fully supports the amendment from the 12/03/02 response in which the limitation of "at least one of blend and overlay" was provided.

The Examiner further rejects claims 1-7 under 35 U.S.C. 112 (1) and states that the specification does not describe how the display controller can both blend and overlay two surfaces (and how to blend and overlay more than two surfaces) as is claimed in claim 1.

Claim 1 does not specify whether the two surfaces are blended before or after being read from memory. The claim recites the steps of:

"causing said first display controller to select and read said first surfaces, convert said first surfaces into a like first format at least when said first surfaces are not all in said like first format, scaling at least one of said first surfaces, at least one of blending and overlaying said first surfaces to obtain a combined first surface, and outputting said combined first surface to provide a first output stream of pixel data"

The specification, at page 7, lines 11-14, states the following:

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"Each CRTC contains one or more backend Scaler (14) (refer to Figure 2) that allows the input surfaces to be re-scaled before being combined (overlaid, blended etc.) with the other surface. Alternatively, pre-scaling of any surface could be done by the drawing engine."

And page 8, line 18 (according to the amendment of 12/02/03) states:

"In the embodiment of Figure 4, the YUV surface is processed by the drawing engine 60 in order to blend using the 3D drawing engine capability within the display controller apparatus to create a blended YUV surface."

These two passages show that it is the display controller apparatus which is responsible for causing the blending, even though the blending may occur in the 3D drawing engine that is considered to be "within the controller". It will be appreciated that, in the case of both blending and overlaying, in the specification as originally filed, blending is done by the drawing engine prior to reading the first surfaces. Nonetheless, the surfaces are read, the surfaces are converted, the surfaces are scaled, the surfaces are blended and overlaid, and the combined surfaces are output to provide output streams of pixel data. For both blending and scaling, the present specification, as well as the '440 application, describe using the drawing engine 60 under the control of the display controller apparatus to cause blending or scaling prior to being read into the CRTC.

Claim 1 stands rejected under 35USC§103 in view of Ranganathan.

The Examiner has stated that the additional logic suggested by Ranganathan is a second RGB path next to YUV path 34 and a second YUV path next to RGB path 36 to allow a movie window on a graphics background to be equally available on both the LCD and the CRT. There is no support for suggesting that the additional logic recited by Ranganathan corresponds to the entire path being duplicated. In fact, according to the resources available in the Ranganathan system, the additional logic which is being referred to in column 7, lines 63-65 corresponds to the modified version of Figure 8A provided herewith (exhibit A). The modified figure illustrates what is suggested by

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Ranganathan in order to allow a first display to display overlaid, scaled, and converted first surfaces and a second display to display overlaid, scaled, and converted second surfaces. Any further modifications go beyond what is suggested by the reference. It is not necessary to duplicate the unit which reads from memory, in this case, the MVE FIFO 62, and outputs the movie pixels in order to allow a movie window on a graphics background to be equally available on both the LCD and the CRT. The simplest modification is to duplicate the scaler, color-space converter, and multiplexer which selects between the scaler output and the color-space converter output and is input into the already existing multiplexers to be sent to the display units. What is input into the duplicated scalar is the output of the MVE FIFO 62, the same data that is input into the original scalar in YUV path 34. Therefore, even with additional logic, Ranganathan does not teach or suggest having a second display controller with the same features of the first display controller such that the CRT and the LCD can display different overlaid images. Moreover, Applicant believes claim 1 to be patentable in view of Ranganathan.

In view of the foregoing, a Notice of Allowance for claims 1-7 is respectfully requested.

Respectfully submitted,

Kamran AHMED

By:



James Anglehart (Reg. 38,796)

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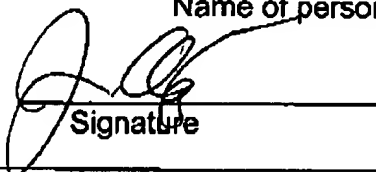
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CERTIFICATE OF FACSIMILE TRANSMISSION

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Marked up copy of specification changes in accordance with 37CFR§1.121(c)(ii)**Page 7, line 23:**

Typically, the graphics memory 50 and one or all encoders are external of the discrete device (ASIC) containing the CRTC's, the drawing engine and the graphics subsystem manager. A graphics device driver 31 is also external to the graphics card device 38 and sends the appropriate control signals to the graphics subsystem manager 36. A first display 26 and a second display 28 receive the data encoded by Encoder1 30 and Encoder2 32.

Page 8, line 18:

In the embodiment of Figure 4, the YUV surface is processed by the drawing engine 60 in order to blend using the 3D drawing engine capability within the display controller apparatus to create a blended YUV surface. This blended surface is like the one which could also be achieved using a blending unit, namely the logo is blended with the source video surface to generate the YUV overlay surface which is then read for display by CRTC2 in full screen output and separately read by CRTC1 for display within a window in the desktop. The output of CRTC1 11 includes a window containing a YUV video with sub-picture blending overlaid over the RGB desktop.

*approved
5/19/03*

Marked-up copy of figure

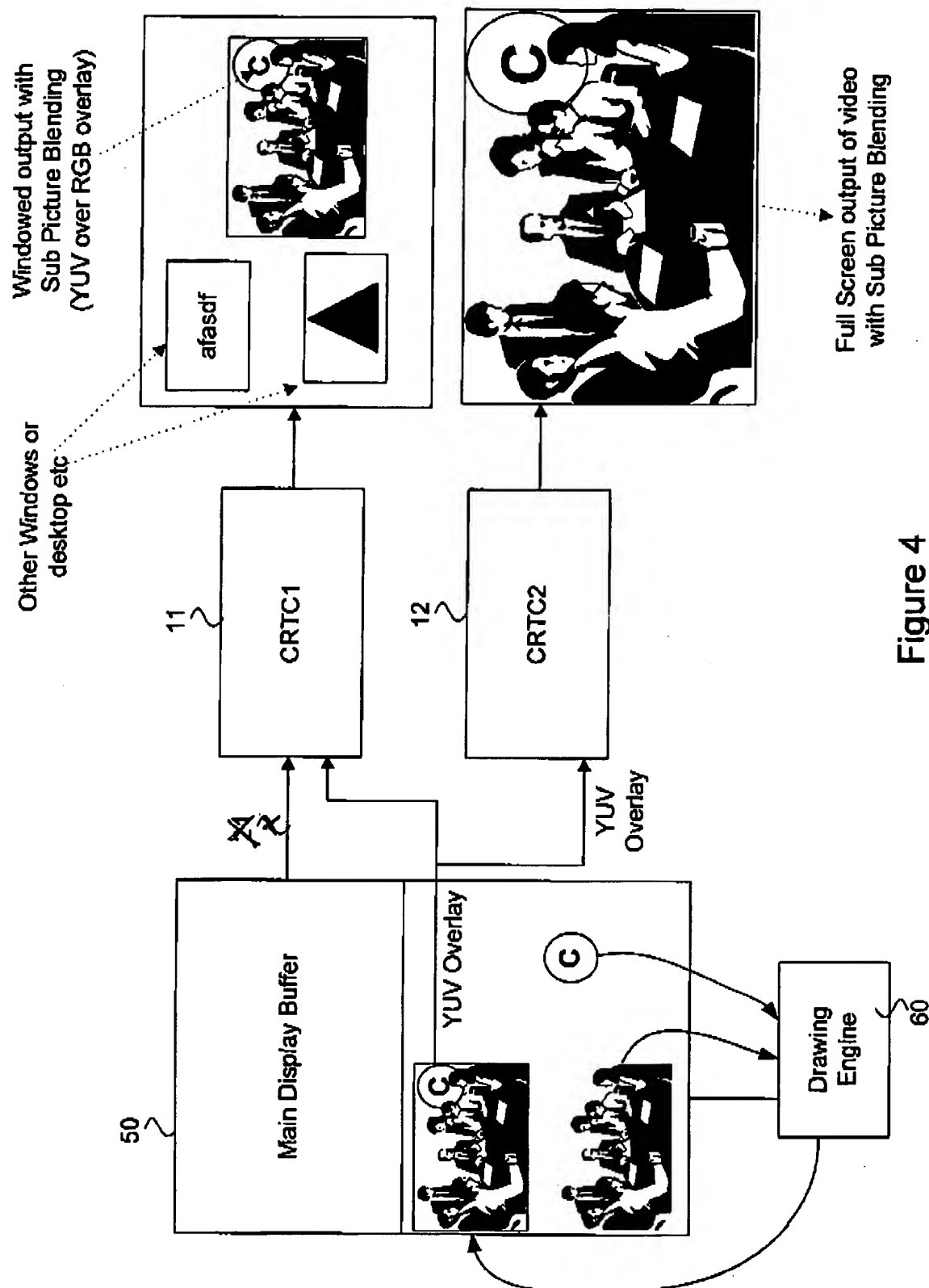
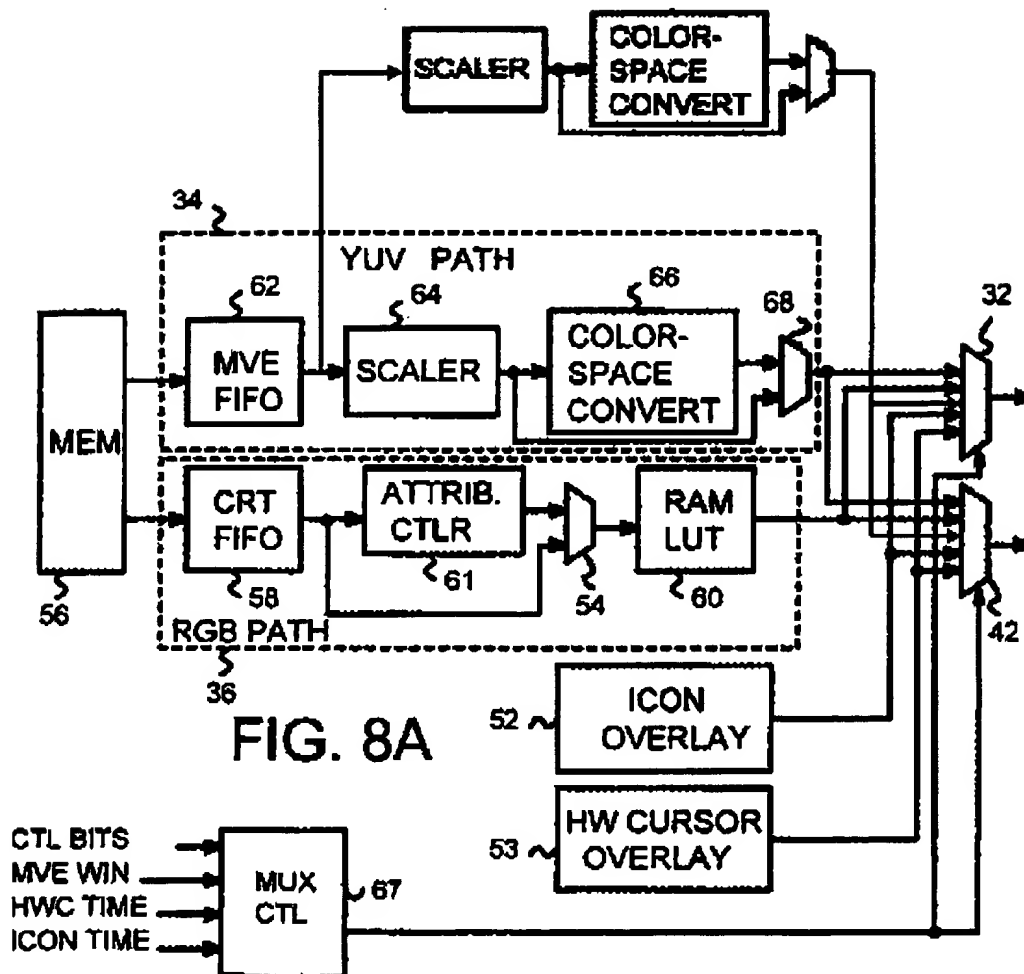


Figure 4

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EXHIBIT A

Modified Figure 8A from Ranganathan illustrating "additional logic"



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